



South Carolina Conservation Cover Technical Guidance (Using introduced and/or native species)

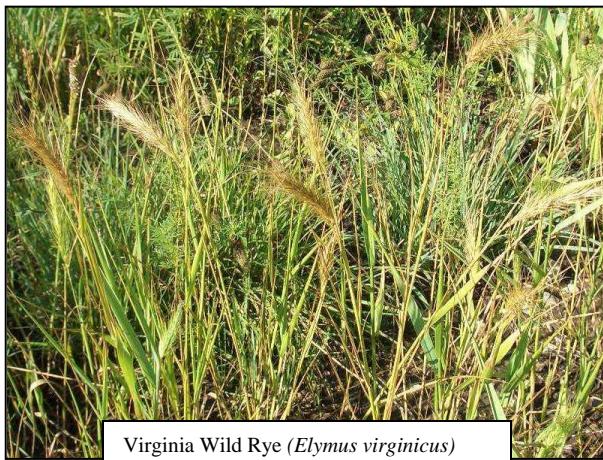
327(b)

Definition

Establishing and maintaining permanent vegetative cover using herbaceous plant species introduced to and native to the Southeastern United States and South Carolina.

Purpose

This practice may be applied to accomplish one or more of the following:



- Reduce soil erosion and sedimentation.
- Improve water quality.
- Improve air quality
- Enhance wildlife habitat.
- Improve soil quality
- Manage plant pests

Native and introduced herbaceous plant species (Grasses, Legumes, and Forbs) provide valuable conservation cover while providing some habitat for game and non-game wildlife species. Several recommended species such as clovers, partridge pea, and bundleflower attract pollinators such as butterflies and bees and would therefore be beneficial to adjacent crops needing pollination. Crops that require pollination include apples, asparagus, broccoli, carrots, cauliflower, celery, cucumbers, onions, legume seeds, pumpkins, squash, sunflowers, citrus fruits, peanuts, cotton, and soybeans.

Condition where practice applies

This practice applies on all lands needing permanent vegetative cover including erosion control plantings. This practice does not apply to plantings for forage production or to typical critical area plantings. This practice is not to be used as part of a planned rotation or grazing system.

General Criteria and Specifications

Planting

One or more native or introduced herbaceous plant species shall be planted. Additional species of native grasses, forbs, and legumes can be added in mix to promote diversity. This greatly enhances habitat for songbirds, northern bobwhite (quail), wild turkey, and pollinators. The species selected shall be chosen from the approved list in Table 1 of this job sheet.

Use the 3 Habitat Categories to guide species selection based on the site conditions

1. upland fields and buffers
2. woodland understory or along shady forested access roads (erosion control),
3. areas with moist soil. **These designations are found in Tables 1 & 2.**

REQUIREMENTS

- Establishment requires planning and attention to details at planting time.
- Cover established by seeding shall be perennials (if only 1 species chosen, it must be a perennial or a reseeding annual).
- Annuals may be included as a companion crop in planting mixtures of perennials. Annual plants for wildlife food plots may be used. Clovers are not to be planted with native warm-season grasses due to competition.
- Plant March 1 thru May, depending on conditions (April is usually best, fall plantings can be successful too).
- If using native warm-season grasses, refer to the SC Conservation Cover 327 (a) Tech Guide using Native Species for planting and management information.
- Maintenance practices and other activities which may disturb nesting are not to be conducted during the primary nesting period of April 1 through Sept. 1. Exceptions may be granted when it is necessary to facilitate establishment of vegetative cover.
- Noxious weeds in fields established to conservation cover will be controlled by mowing, fire, tillage, or herbicides as appropriate. Herbicides are recommended as the best alternative because of long lasting effects (*see Pest Management standard-595*). Treat only portions of the field needing weed control (spot treatment).
- In general the recommended seeding rate for establishing wildlife habitat is 6 lb. of pure live seed (PLS) per acre. This is important. These plants often have very low germination rates. If 6 lbs of pure live seed per acre is the recommendation and the germination rate is 50%, farmers will have to plant a total of 12 lbs of seed per acre. A recommended seeding rate for erosion control is 8-12 lb. PLS/ac. Consider the specific resource concern when selecting species (refer to table on next page) and deciding on seeding rates and mixes. For erosion control, apply nitrogen when a stand is established (1st year) at 40-50 pounds per acre (mid-year); for maintenance apply 20-25 pounds per acre as growth begins and 20-25 pounds per acre in the middle of the growing season. Consider using grass species that establish quickly as shown in Table 2 for erosion control plantings.
- Plant nutrients, if required, for maintenance will be applied according to the standard, *Nutrient Management-590*.



Partridge Pea (*Chamaecrista fasciculata*)

Considerations

- Consideration for wildlife should be given by rotating management or maintenance practices throughout the managed area. For example, burn or lightly disk only one third of a field each year by treating alternate strips or alternate portions of the field instead of treating the entire field each year. Prescribed burning should be utilized instead of mowing where feasible. Burning will be in accordance with the standard, *Prescribed Burning-338*.
- In situations where target site is sloped ($> 6\%$) and has high erosion potential, mulch newly seeded area with 1 ton per acre of mulch material. Straw mulch shall consist of wheat, barley, oat or rye grain straw, hay, or grass cut from native grasses. Mulch must not contain noxious or invasive weeds.
- In situations where target site is sloped ($> 6\%$) a small grain crop can be planted as a quickly establishing companion crop at the rate of 5 pounds per acre (use wheat, barley, oats, rye grain, or browntop millet).
- **Make sure all planting equipment is cleaned prior to use on site to prevent seeds, rhizomes or other material from invasive exotic plants from being brought to the site.**



Table 1. Introduced Species for Conservation Cover for Wildlife		Soil Moisture, Light Requirements	Annual, Biennial, or Perennial	* Habitat in which to use	Seeding Rate
Common Name	Scientific Name				
Ladino or White Clover (forb)	<i>Trifolium repens</i>	moderate, full sun	P	1	5 - 10 lbs/ac alone; (15- 25% in mix)
Alfalfa (legume) varieties Florida 99, Alfagraze, Amerigraze 702	<i>Medicago sativa</i>	low to high, full sun	P	1, 3	5 -10 lbs/ac PLS alone (8-10 lbs/ac in mix)
Orchard Grass (does well in mtns & piedmont, not coastal plain)	<i>Dactylis glomerata</i>	moderate, partial shade	P	1, 2	15 - 18 lbs/ac alone (or 10 lb/ac in a mix)
The species below can be added as part of a mix but should not be planted alone (plant as "nurse crops" with slow establishing native grasses), clovers are not to be planted with native warm-season grasses.					
Lacy Phacelia (forb)	<i>Phacelia tanacetifolia</i>	low, full sun	A	1	5-15% in a mix
Arrowhead Clover (forb)	<i>Trifolium vesiculosum</i>	moderate to high, full sun	A	1	5-15% in a mix
Red Clover (forb)	<i>Trifolium pratense</i>	moderate, full sun to partial shade tolerant	B	1	5-15% in a mix
Grain Barley	<i>Hordeum vulgare</i>	moderate, full sun	A	1	30 lbs/ac in mix
Grain Wheat	<i>Triticum aestivum</i>	low to moderate, full sun to shade	A	1, 2	20 lbs/ac in mix
Grain Rye	<i>Secale cereale</i>	moderate to high, full sun	A	1, 3	30 lbs/ac in mix
Oats	<i>Avena sativa</i>	low to moderate, full sun	A	1	30 lbs/ac in mix
Browntop Millet	<i>Panicum ramosum</i>	high, full sun	A	1, 3	10 lbs/ac in mix
Proso Millet	<i>Panicum miliaceum</i>	low to moderate, full sun	A	1	10 lbs/ac in mix
Japanese Millet	<i>Echinochloa esculenta</i>	low to high, full sun	A	1, 2, 3	10 lbs/ac in mix
Table 2. Native Alternatives for Conservation Cover for Wildlife		Soil Moisture, Light Requirements	Annual or Perennial	* Habitat in which	Seeding Rate
Common Name	Scientific Name				
The species below are native alternatives to Sericea or Chinese lespedeza (<i>Lespedeza cuneata</i>) and can be planted alone:					
Partridge Pea (legume)	<i>Chamaecrista fasciculata</i> / <i>Cassia fasciculata</i>	low, full sun or light shade	A reseeds	1, 2	6 - 8 lbs/ac
Illinois Bundleflower (legume from midwest)	<i>Desmanthus illinoensis</i>	moderate, full sun	P	1, 3	3 - 4 lbs/ac
The species below are native alternatives to fescue, bermuda, bahia, dallis grass and carpetgrass; and can be planted alone:					
Switchgrass (Alamo and Kanlow cultivars do best)	<i>Panicum virgatum</i>	low to high, full sun	P	1, 3	6-8 lbs/ac PLS (1-2 lbs/ac or 10-20% in mix)
Atlantic Coast Panic Grass	<i>Panicum amarum</i>	low , full sun	P	1	10 lbs/ac PLS drilled, 15 lbs/ac PLS broadcast (2 lbs/ac or 5-25% in mix)
Indian Grass	<i>Sorghastrum nutans</i>	low to moderate, full sun	P	1	5-6 lbs/ac PLS (2 lbs/ac or 10-30% in mix)
Little Bluestem	<i>Schizachyrium scoparium</i> (<i>Andropogon scoparius</i>)	low, full sun	P	1	6-8 lbs/ac PLS (3 lbs/ac or 10-30% in mix)
Deer Tongue Panic Grass (Tioga)^	<i>Panicum clandestinum</i> (<i>Dichanthelium clandestinum</i>)	moderate, partial shade tolerant	P	2, 3	8 lbs/ac PLS (2 lb/ac or 5-25% in mix)
Fall or Smooth Panic Grass^	<i>Panicum dicotomiflorum</i>	moderate, partial shade tolerant	P	2, 3	10 lbs/ac PLS (2 lbs/ac or 5-25% in mix)
Virginia Wild Rye^	<i>Elymus virginicus</i>	moderate to high, shade tolerant	P	2, 3	20 lbs/ac PLS drilled, 30 lbs/ac PLS broadcast (2 lbs/ac or 5-25% in mix)
Canada Wild Rye^	<i>Elymus canadensis</i>	low, partial shade tolerant	P	1, 2	10 lbs/ac PLS drilled, 15 lbs/ac broadcast (2 lbs/ac or 5-25% in mix)
* 1. upland fields and buffers, forest openings 2. woodland understory or along shady forested access roads, 3. areas with moist soil.		^ establishes quickly		PLS = Pure Live Seed	

Example Seeding Mixtures Suitable for Conservation Cover:

TARGET PLANTING DATE	SEED MIXTURE AND RATE
January - Date of Last Frost	Partridge Pea (well-drained sites)-5lbs./acre, with Wheat or Rye grain- 40lbs./acre, and Switchgrass - 5 lbs. of pure live seed/acre <i>drilled, or</i> 7 lbs. or pure live seed/acre <i>broadcast</i>
April 15 - May 31	"Atlantic" Coastal panicgrass (well-drained sites) - 7lbs. of pure live seed/acre drilled
Date of Last Frost - May 31	Eastern gamagrass (<i>purchase "stratified seed"</i>) - 15 lbs. of pure live seed/acre drilled
May - August*	Browntop Millet (well-drained sites) - 20 lbs./acre, <u>or</u> Proso Millet (well-drained sites) - 20 lbs./acre, <u>or</u> Japanese millet (wet sites) - 20 lbs./acre

*Only provides temporary cover using summer annuals. A subsequent perennial planting will be required during the autumn or winter following this planting.

September - October	Orchardgrass - 10 lbs./acre, with Ladino White Clover - 3 lbs./acre, plus Arrowhead or Red Clover- 5 lbs./acre, and Wheat or Rye - 40 lbs./acre
Date of First Frost - December	Wheat or Rye grain- 40 lbs./acre with Switchgrass - 5lbs. of pure live seed/acre <i>drilled</i> , or 7lbs. of pure live seed/acre <i>broadcast</i>
Date of First Frost - December	Eastern gamagrass (<i>purchase "unstratified seed"</i>) - 15 lbs. of pure live seed/acre <i>drilled</i>

CULTIVAR SELECTION	
Switchgrass	Orchardgrass
For well drained - moderately well drained sites: "Blackwell", "Carthage", "Alamo". For moderately well drained - poorly drained sites: "Kanlow", "Cave-In-Rock", "Shelter".	For well-drained - moderately well drained sites: "Shiloh", "Benchmark", "Hallmark". Eastern gamagrass For well drained-somewhat poorly drained sites: "Pete", "Tuka".

IMPORTANT SEE PURCHASE AND PLANTING INFORMATION

1. Purchase of native grass seed on a *Pure Live Seed* (PLS) basis is strongly recommended to ensure adequate amounts of quality seed are obtained. Ask vendors to sell the "*Lbs. of Pure Live Seed*" needed for your job. You will receive bags of bulk seed containing the needed amount of live grass seeds. The planting equipment must be calibrated to apply the bulk-seed rate necessary to place the target PLS rate in the soil. Determine the correct machine setting using the following formula:

Set Machine to Plant

Target PLS rate per acre to plant (*from spec.*) _____ = _____ lbs. seed/acre
 _____ % Purity x _____ % Germination (*from seed tag*)

2. Bulk-weight purchase and planting of orchardgrass, small grain, millet, clover, and partridge pea normally provides sufficient amounts of quality seed for establishing these plants.

Correct soil pH as needed to reach the range of 5.5 - 7.5. Apply fertilizer with an N-P-K ratio of 0-1-1, or 0-0-1 to correct phosphorus or potassium deficiency indicated by a soil test. Broadcast seed onto firm level seedbed then roll it into contact with soil after planting. Drilled seed should be placed 1/4 to 1/2 inch deep.

For prompt stand establishment, weed control is essential prior to and during the establishment period. During the first growing season, weeds should be controlled with mowing or herbicide to prevent heavy shading of desirable seedlings. Caution must be taken to prevent heavy cutting or chemical injury to desirable seedlings.

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Deer Tongue – Tioga (*Dichanthelium clandestinum*)

Site Specific Comments and Recommendations: USDA-NRCS**Conservation Cover 327 – Job Sheet**

Landowner _____ Field number _____

<i>Purpose (check all that apply)</i>	
<input type="checkbox"/> Reduce erosion from wind and water	<input type="checkbox"/> Management of harmful insect populations
<input type="checkbox"/> Soil and water quality protection	<input type="checkbox"/> Provide wildlife food and cover

<i>Layout</i>		<i>Site 1</i>	<i>Site 2</i>	<i>Site 3</i>	<i>Site 4</i>
Field or Border width (feet)					
Field or Border length along edge of field (feet)					
Area (acres)					
Slope (%)					
Species #1	Seeding rate-----				
Species #2	Seeding rate-----				
Species #3	Seeding rate-----				
Species #4	Seeding rate-----				
Lime (tons/acre)					
P ₂ O ₅ (lbs/acre)					
K ₂ O (lbs/acre)					

(Seeding rate = lbs. pure live seed / acre)

Site Preparation

Prepare a firm seedbed. Apply lime as indicated by soil testing. Additional requirements:

Planting Method

Drill grass, forb, and legume seed 1/4 inches deep or broadcast uniformly over area. Establish vegetation according to the specified seeding rate. *If necessary* (for sloped areas > 6% with high erosion potential), mulch newly seeded area with 1,000 lbs per acre of mulch material. Straw mulch shall consist of wheat, barley, oat or rye grain straw, hay, or grass cut from native grasses. Mulch must not contain noxious or invasive weeds. A small grain crop can be planted as a companion crop at the rate of 5 pounds per acre (use wheat, barley, oats, rye grain, or browntop millet) sloped areas > 6% with high erosion potential). Additional requirements:

Operation and Maintenance

Maintain original width and length of field or field border(s). Burn, lightly disk, mow, reseed, and lime as necessary to maintain plant density and vigorous plant growth. Inspect after major storms, remove trapped sediment, and repair eroding areas. Shut off pesticide sprayers when turning on a field border. Additional requirements: